

**MEMORANDUM**

among

**THE NATIONAL SCIENCE FOUNDATION  
(NSF)  
of  
THE UNITED STATES OF AMERICA,**

**THE MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND  
TECHNOLOGY  
(MEXT)  
of  
JAPAN,**

and

**THE MINISTRY OF SCIENCE AND TECHNOLOGY  
(MOST)  
of  
THE PEOPLE'S REPUBLIC OF CHINA**

concerning **PARTICIPATION of**

**THE PEOPLE'S REPUBLIC OF CHINA**

in

**THE INTEGRATED OCEAN DRILLING PROGRAM (IODP)  
as an Associate IODP Member**

The Integrated Ocean Drilling Program (IODP) is a multinational program of scientific research in the oceans which uses drilling and logging to undertake research on earth system processes ranging from changes in the earth's climate to the rifting and drifting of continents. The IODP builds on the scientific results of the Deep-Sea Drilling Project (DSDP) initiated in 1968 and the Ocean Drilling Program (ODP), which succeeded the DSDP in 1985, and the encouragement that the United Nations Convention on the Law of the Sea has provided to international cooperation in marine scientific research. The IODP seeks to expand the international sharing of intellectual and financial resources, which have been critical to the success of scientific ocean drilling. The IODP scientific program is identified in the Initial Science Plan for the IODP, *Earth, Oceans and Life*, and includes emphasis on the following research themes:

The Deep Biosphere and the Sub-seafloor Ocean: Drilling will concentrate on defining the architecture and dynamics of the vast sub seafloor plumbing system,

where flowing water alters rock, modifies the long-term chemistry of the oceans, lubricates seismically active faults, concentrates economic mineral deposits, and controls the distribution of the deep biosphere.

The Processes and Effects of Environmental Change: Using a global array of sites, ocean sediment cores will be used to construct a detailed record of the causes, rates and severity of changes in the earth's climate system and their relation to major pulses in biologic evolution.

Solid Earth Cycles and Geodynamics: Drilling will concentrate on sampling and monitoring regions of the seafloor that currently have the highest rates of energy and mass transfer, and comparing these results to older geologic settings. A crucial initial program of deep drilling will be to study the seismogenic zone responsible for large destructive earthquakes along active plate boundaries.

The primary operations of the IODP are conducted by contractors (Implementing Organizations) responsible to the National Science Foundation of the United States of America (NSF) and the Ministry of Education, Culture, Sports, Science, and Technology of Japan (MEXT), hereafter referred to as the Agencies. The IODP drilling operations focus on a core capability provided by two scientific ocean drilling platforms. One is a riser-capable vessel provided by the MEXT and owned and operated by the Independent Administrative Institution, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), and the other is a non-riser vessel provided by the NSF and operated by the Joint Oceanographic Institutions, Inc. (JOI). Both vessels are available for scheduling and operations on a global basis, based on recommendations from the IODP Science Advisory Structure (SAS). Access to mission specific platforms (MSPs) (in addition to the two primary vessels) is required to meet specific objectives of the science plan for shallow water and Arctic drilling that cannot be effectively done through use of the riser-capable or non-riser vessels. Financial support for the operation of these additional platforms comes from IODP member(s) or associate IODP member(s), who make the decision to offer this additional capability to the Program. The British Geological Survey (BGS) is the primary MSP Implementing Organization for the IODP as identified in Annex C. The IODP seeks cooperation with other earth and ocean science programs and initiatives. The scientific and technical results of the IODP are openly available.

Based on IODP membership principles, the NSF, the MEXT, and the Ministry of Science and Technology of the People's Republic of China (MOST), hereafter referred to as the Participants, intend to cooperate in IODP activities during the period 1 October 2003 to 30 September 2008, as described in the following sections:

#### 1 - STATUS OF THIS DOCUMENT

This Memorandum and its annexes are not legally binding, do not give rise to obligations or commitments under international law, and should have no effect as legal precedents.

## 2 - MEMBERSHIP IN THE IODP

The MOST has elected to be an associate IODP member and intends to cooperate and participate in the IODP in support of the IODP science program during the period of 1 October 2003 to 30 September 2008.

All cooperative activities described in this Memorandum, including funding arrangements and exchanges of technical information, equipment, and data, are conducted within the limits of available funds and in accordance with the national laws and regulations of each Participant, as well as with international agreements to which the Participants are party, particularly any intended to prevent, reduce, and control pollution of the marine environment.

## 3 - DURATION OF IMPLEMENTATION

The IODP implementation period extends from 1 October 2003 until 30 September 2006. During this period, drilling is to be accomplished from the non-riser platform, and from MSPs (if recommended by the SAS and if funding and/or other resources is provided by IODP members or associate IODP members). Preparation for riser drilling (including detailed scientific planning, engineering planning, and engineering and safety surveys, etc.) is also to be undertaken in this period. Full implementation of the IODP, including drilling programs on the riser-capable vessel, the non-riser vessel, and from MSPs (if recommended by the SAS and if funding and/or other resources is provided by IODP members or associate IODP members), is expected to occur beginning 1 October 2006.

## 4 - SCIENTIFIC PLANNING

Scientific planning and direction of the IODP is a function of the SAS. The SAS is composed of scientists and engineers representing the Participants and other IODP members. It provides long-term guidance on the scientific planning of the IODP, and recommends annual science and engineering plans based on proposals from the international science community.

The SAS Executive Authority and committee for scientific planning are composed of representatives from scientific institutions or organizations in the IODP member countries/consortia that have a major interest in the study of the seafloor. The SAS Executive Authority formulates scientific and policy recommendations with respect to IODP planning and operations. The SAS committee for scientific planning undertakes detailed planning and may establish panels, working groups and committees as required.

The MOST may elect to be represented on the SAS as identified in Annex B.

The Chairmanship of the SAS initially rotates between institutions in Japan and the United States, with a term of 2 years. The SAS may establish panels and/or

committees as needed to address its responsibilities, including panels on platforms and on science operations.

## 5 - OPERATIONS PLANNING AND MANAGEMENT

The Central Management Office (CMO) develops and manages operations and implementation plans for the IODP program. The CMO receives advice and recommendations on scientific priorities and plans from the SAS, requests plans that are responsive to this advice from Implementing Organizations, and negotiates with Implementing Organizations and the SAS to produce an integrated annual IODP Program Plan. The annual IODP Program Plan contains a presentation of total program costs, which include both science operation costs and platform operations costs (see section 10). The CMO manages science operations funds that are provided under contract with the NSF.

The SAS Executive Authority reviews and approves the annual IODP Program Plan and budget prior to its consideration by the Agencies. The NSF has responsibility for contractual approval of the annual IODP Program Plan, in consultation with the MEXT. After approval by the Agencies, significant changes in the annual IODP Program Plan are to be considered and approved by the CMO and the Agencies prior to implementation, in consultation with the SAS Executive Authority and the Implementing Organizations, as appropriate.

## 6 - IODP COUNCIL

The MOST may elect to be represented on the IODP Council. The members of the Council are representatives of each country or entity contributing to the support of the IODP, regardless of whether it participates as an individual IODP member or as a member of a consortium. Each Participant designates its own representatives to the Council. There should ordinarily be one representative of each Participant, except that additional representation from Japan and the United States may be appropriate.

The Council serves as a consultative body reviewing financial, managerial, and other matters involving the overall support of the IODP. The Council provides a forum for exchange of views among the contributing countries. No formal voting procedures are to be established. There are to be no national symbols displayed at IODP Council meetings, or as part of official IODP publications or exhibitions.

The MEXT and the NSF designate Principal Officials who have responsibility for Agency oversight of IODP implementation, operations, management, and funding issues. The Principal Officials serve as the chairs of the Council, alternating on an annual basis. A formal agenda is prepared for each meeting and written records of each meeting are kept.

The chair provides secretariat services to the Council. The Council normally meets once each year. The annual meeting includes a financial report and discussion, an audit report, a review of scientific and technical achievements for the past year, presentation of draft program plans and budgets for the coming year, and other topics of mutual interest. Liaison representatives of prime contractors, Implementing Organizations and important scientific planning entities are available to the Council.

## 7 - PROJECT PROPOSALS AND DATA SHARING

Scientists of the People's Republic of China:

- a) may make proposals to the SAS for scientific projects or technical objectives of interest to the scientific community of the People's Republic of China;
- b) may have access to all data from geophysical and other site surveys performed in support of the program which are used for drilling planning; and
- c) may have access to engineering plans, data or other information developed under contracts supported as program costs.

Support for geophysical and geological surveys and research to prepare drilling proposals and identify drilling targets may be contributed by the People's Republic of China as its scientific interests and available resources allow. Site survey requirements are identified by the SAS.

## 8 - PARTICIPATION ON BOARD IODP DRILLING PLATFORMS

The Implementing Organizations provide science operations and services on IODP drilling platforms, and, with the advice of the SAS, select the scientific teams for each cruise or drilling program, based on nominations and applications from IODP members and associate IODP members. It is understood that the Agencies are to have equal participation of their country's scientists in all IODP drilling programs, and together are to have no less than two-thirds of the available scientific positions.

The People's Republic of China scientists may participate in IODP drilling cruises and programs. It is understood that opportunities for such participation is intended to be proportional to the level of support provided by the MOST and are identified in Annex B.

It is recognized that some cruises may be of special scientific interest to the People's Republic of China scientists, and increased participation by scientists of the People's Republic of China on these cruises may be appropriate. It is

recognized that such increased participation would be expected to be offset by reduced participation in other cruises.

Co-chief scientists for IODP drilling programs are nominated by the SAS. It is expected that at least two-thirds of the scientists invited to serve as co-chief scientists are to be representatives of Japan and the United States. It is expected that scientists representing the People's Republic of China would be invited to serve as co-chief scientists in proportion to the MOST's contribution. In nominating co-chief scientists, the SAS pays due consideration to those scientists responsible for proposing drilling proposals and plans.

## 9 – ACCESS TO SAMPLES, DATA AND REPORTS

Scientists from the People's Republic of China have access to IODP data and core samples. The procedures and policies for obtaining IODP samples and data are recommended by the SAS. The MOST indicates that it endeavors to ensure that the People's Republic of China scientists and institutions provide the scientific data resulting from site surveys and laboratory analyses in time for preparation of IODP publications, and for inclusion in IODP data bases. The MOST is expected to provide the Agencies with copies of all publications from the People's Republic of China scientists that are based on program material. The MOST is to receive an appropriate number of copies of all IODP publications and reports.

## 10 - FINANCIAL SUPPORT

The MOST intends to support the IODP with financial contributions as described in Annexes A and B. The financial contributions to the NSF of all IODP members and associate IODP members are commingled to support science operation costs of the IODP. Science operation costs are determined by the Agencies. Science operation costs provide for those activities onboard program platforms necessary to the proper conduct of the scientific research program and those shore-based activities required to properly maintain and distribute samples and data, support seagoing activities, and administer and manage the program. Such costs include, for example: (1) technical services, (2) computer capability, (3) data storage and distribution, (4) description, archiving, and distribution of data and samples, (5) deployment of a standard suite of logging tools, (6) development of new drilling tools and techniques required by IODP research, (7) program publications, (8) costs of consumables (exclusive of those identified under platform operations costs below), and, (9) costs required for administration and management, including the CMO.

Platform operations costs of the riser-capable and non-riser vessels are supported by the MEXT and the NSF respectively, and for MSPs by the IODP member or the associate IODP member electing to provide such capability. Member financial contributions are not used to support platform operations costs. Platform operations costs for these vessels and for MSPs support the basic operation of the

vessel as a drillship, and include, for example: (1) costs of the drilling and ship's crew, (2) catering services, (3) fuel, vessel supplies and other related consumables, (4) berthage and port call costs, (5) disposal of wastes, (6) crew travel, (7) inspections and insurance, (8) drilling equipment, supplies, and related consumables, (9) engineering or geophysical surveys, and data acquisition and laboratory analyses required for the safety of platform and drilling operations, and, (10) administration and management costs of the platform operators.

Legal and financial responsibility, including mobilization and platform operations costs, for the riser capable-vessel resides with the MEXT, and for the non-riser vessel with the NSF. Legal and financial responsibility, including mobilization and platform operations costs, for additional platforms is to reside with the organization(s) or country(ies) which provide such capability to the IODP. Provision of such capability is not considered a contribution in lieu of annual IODP membership contribution.

Support of scientific research and development costs for shore-based analysis and research on IODP samples and data and for non-routine downhole measurements are the responsibility of the participating countries, or IODP members or associate IODP members, and are not supported as program costs.

Activities carried out by the Participants contractors in direct support of the Participants individual scientific undertakings are not program costs and are not supported from commingled funds.

#### 11 - SALARIES, TRAVEL AND EXPENSES

Salaries, travel and expenses for participants representing the People's Republic of China are to be borne by the People's Republic of China. Costs of accommodations for the People's Republic of China scientists and members of technical parties aboard IODP drilling platforms are program costs and are the responsibility of the platform operator. The platform operators are to offer the People's Republic of China scientists assistance when going between the airport and the drillship, and NSF through its contractors is to provide assistance for the People's Republic of China scientists when pursuing visas.

#### 12 - CONSULTATION

Meetings of the Agency representatives and representatives of the MOST may be held at any mutually acceptable time upon the request of any Participant to discuss this Memorandum and other matters of mutual interest.

#### 13 - CONCLUDING PROVISIONS

The Participants intend to cooperate under this Memorandum from 1 October 2003 until 30 September 2008.

This Memorandum may be modified by written consensus of the Participants.

Cooperation under this Memorandum may be discontinued at any time by any Participant. The other Participants should receive written notice at least one year in advance.



SIGNED in the English language.

徐光華

2004年4月26日

Xu Guanhua  
Minister

Date

For  
THE MINISTRY OF SCIENCE AND TECHNOLOGY (MOST)  
OF  
THE PEOPLE'S REPUBLIC OF CHINA

河村建夫

4/26/2004

Takeo Kawamura  
Minister

Date

For  
THE MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND  
TECHNOLOGY (MEXT)  
OF  
JAPAN

Arden L. Bement, Jr.

4/19/04

Arden L. Bement, Jr.  
Acting Director

Date

For  
THE NATIONAL SCIENCE FOUNDATION (NSF)  
OF  
THE UNITED STATES OF AMERICA

## ANNEX A

### ANTICIPATED ANNUAL MEMBER CONTRIBUTIONS

A Participant's expected level of participation in the IODP is recognized to be proportional to the number of "participation units" represented by that Participant's contribution to the IODP.

Based on 2002 projections of total annual Program costs for a fully operational IODP program (approximately \$150 million U.S. dollars), and considering IODP program activities and costs planned for the implementation period (1 October 2003 to 30 September 2006) identified in the Memorandum, the annual contribution for one participation unit is considered to be as follows:

	(U.S. Dollars)
1 October 2003 - 30 September 2004 (U.S. Fiscal Year 2004)	= \$1.5 million
1 October 2004 - 30 September 2005 (U.S. Fiscal Year 2005)	= \$3.5 million
1 October 2005 - 30 September 2006 (U.S. Fiscal Year 2006)	= \$3.5 million

Additional financial contributions as well as the long-term provision of mission specific platforms (MSPs) for shallow water and Arctic drilling may count toward additional participation units.

The annual contribution for one IODP participation unit for the period 1 October 2006 to 30 September 2013 is estimated to be \$5.6 million (U.S. dollars), but this figure is subject to increase or decrease based on operating experience and projected operating costs. Identification of the annual contribution level for this period will be done by the Agencies.

It is recognized that an IODP member may elect to have a representative on each committee or panel of the SAS, and two scientific participants per "cruise leg", or equivalent, for each platform operation identified as an IODP cost, for each participation unit. Additional participants on a cruise leg may be acceptable, but it is expected that these would be offset by reduced participation in other legs.

Associate IODP members are those that contribute for an amount equivalent to at least 1/6 participation unit. Associate IODP members may elect to have scientific participation and representation on SAS service committees, panels, or working groups in proportion to their contributions. However, it is not anticipated that an associate IODP member would have representation on the SAS Executive Authority.

## **ANNEX B**

**ANTICIPATED FINANCIAL CONTRIBUTION  
FOR THE U.S. FISCAL YEARS 2004-2008  
by  
THE MINISTRY OF SCIENCE AND TECHNOLOGY (MOST)  
of  
THE PEOPLE'S REPUBLIC OF CHINA**

The Ministry of Science and Technology, of the People's Republic of China (MOST) intends, subject to its budget process, to support the IODP with a total contribution of five and one-half million dollars (U.S. \$5.5 million) over the period 1 October 2003 to 30 September 2008.

It is recognized that the MOST may elect for its scientists to have six participation months per year (3 scientists per year of operations) on non-riser vessel programs for the period 1 October 2003 to 30 September 2008, and six participation months per year on riser-capable vessel programs for the period 1 October 2006 to 30 September 2008 (during implementation of full IODP operations). Participation on mission specific platform (MSP) drilling programs is to be dependent on MSP activity and corresponds to one-quarter participation units.

Based on MOST's intent to seek resources to increase its contribution to IODP, its participation in SAS from 1 October 2003 until 30 September 2008 is:

- 1) Non-Voting Membership on:  
Science Planning Committee (SPC)  
Technical Advisory Panel (TAP)
  
- 2) Membership on:  
Interior Processes of the Earth Panel (ISSEP)  
Exterior Processes of the Earth Panel (ESSEP)  
Scientific Measurements Panel (SCIMP)  
Site Survey Panel (SSP)  
Industry Liaison Panel (ILP)

or their equivalents.

Invited Observers from MOST may attend all other SAS committee and panel meetings.

The MOST intends to make arrangements to transfer its contribution funds to the NSF, and anticipates doing so according to the following schedule:

(U.S. Dollars)

1 October 2003 - 30 September 2004	(U.S. Fiscal Year 2004) = \$1,500,000
1 October 2004 - 30 September 2005	(U.S. Fiscal Year 2005) = \$1,000,000
1 October 2005 - 30 September 2006	(U.S. Fiscal Year 2006) = \$1,000,000
1 October 2006 - 30 September 2007	(U.S. Fiscal Year 2007) = \$1,000,000
1 October 2007 - 30 September 2008	(U.S. Fiscal Year 2008) = \$1,000,000

It is recognized that, should the IODP be discontinued before September 30th of a fiscal year, the NSF intends to reimburse the MOST one-twelfth of its yearly contribution for each month of curtailment in the fiscal year. Should the MOST withdraw from the Program prior to September 30<sup>th</sup> of a fiscal year, the MOST acknowledges that the NSF does not intend to refund its contributions.

## **ANNEX C**

### **THE BRITISH GEOLOGICAL SURVEY (BGS) AS THE PRIMARY IMPLEMENTING ORGANIZATION FOR MISSION SPECIFIC PLATFORMS (MSPs)**

It is the intent of the ECORD Managing Agency (EMA) to support the British Geological Survey (BGS) (the ECORD Science Operator - ESO) as the primary Implementing Organization for the management of mission specific platform (MSP) drilling in the IODP. The ESO carries out functions for MSP drilling operations analogous to those of the riser and non-riser Implementing Organizations.

As the primary MSP Implementing Organization, the ESO is to:

Coordinate the available infrastructure for MSP operations for Central Management Office (CMO) planning.

Provide advice on MSP drilling technology and development of state of the art drilling tools and associated shipboard laboratories for the IODP.

Undertake the operation of IODP MSP drilling except when a compelling case for a more effective operation is made by another provider, as determined by the CMO.

Present yearly drilling plans to the CMO in conjunction with secondary MSP providers.